score-matched groups, with evaluation of postoperative complications, short-term mortality, and long-term survival. More recent data collection may affect the complications and short-term mortality because most lung resections are now performed in a minimally invasive fashion, compared with the data collection period of 2010.

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Commentary: Mitigating lung cancer mortality in patients with end-stage renal disease

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As patients live longer, the presence of significant comorbidities at the time of lung cancer diagnosis has increased.¹ In particular, the global prevalence of chronic kidney disease (CKD) has increased 29.3% over the last 30 years and has been associated with greater risks of short-term mortality and morbidity following lung cancer surgery.²⁻⁴ The rising incidence of CKD and dialysis-dependent (DD) end-stage renal disease (ESRD) in patients with non-small cell lung cancer requires accurately estimating the impact of preoperative CKD/ESRD on postoperative outcomes. In addition, understanding the long-term association of CKD/ESRD on cancer-specific and overall survival is essential for developing a patient-centered treatment plan for this complex population.

Robert M. Van Haren, MD, MSPH, and Aaron M. Delman, MD, MS

CENTRAL MESSAGE

Lung cancer resection in patients with preoperative renal dysfunction can mitigate cancer-specific mortality.

Saito and colleagues,⁵ in this issue of the *Journal*, tackle this dilemma and investigate the relationship between preoperative CKD/ESRD and long-term survival after lung cancer resection. Using the Japanese Joint Committee of Lung Cancer Registry, they were able to identify a nationwide cohort of 16,377 patients who underwent resection for non-small cell lung cancer in 2010. Patients were then stratified by renal function status before surgery, ie, control, nondialysis-dependent (NDD)-CKD, and DD-ESRD, and outcomes were compared between groups.

The authors identified NDD-CKD and DD-ESRD as independent risk factors for all-cause mortality following lung cancer resection. Interestingly, when separating out cancer-specific mortality, there was a stark difference in the cause of death between cohorts. Only 29.7% of patients with DD-ESRD and 51.0% of NDD-CKD experienced cancer-specific mortality, which was lower than

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the 58.1% incidence of lung cancer mortality in the control arm.

These findings are particularly insightful for thoracic surgeons for the following implications. First, this is the largest study to describe the long-term survival of this population and can be used during the informed consent process to highlight the significance of preoperative renal dysfunction. Second, among patients with NDD-CKD/DD-ESRD and resected lung cancer, the primary driver of mortality is not their lung malignancy, nor the morbidity of surgery, but rather their underlying renal dysfunction. We posit that thoracic surgeons should continue early curative intervention in this cohort to mitigate cancer-specific mortality in this population. Moreover, thoracic surgeons can advocate on their patient's behalf for aggressive management of their underlying renal disease with referrals for life-saving kidney transplantation. Current guidelines recommend a 3- to 5-year waiting period after curative lung resection before transplant for stage I-IIIa malignancies.⁶ Based on the long-term follow-up data of Saito and colleagues,⁵ greater than 50% of patients with stage I-IIIa disease will be alive and eligible for transplantation, which can then correct their primary driver of mortality. A true multidisciplinary approach—thoracic surgery, nephrology, and transplant

physicians—can be mobilized to offer the optimal patient-centered care in this complex population.

We congratulate Saito and colleagues⁵ on their contribution to our understanding of the association between CKD/ESRD and postoperative survival following lung cancer resection. This work can be implemented to improve our risk-benefit discussions with patients, and, potentially, to encourage aggressive multidisciplinary care in this complex population.

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